

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising a wiring comprising at least a laminate of a first conductive film with a property as a barrier and a second conductive film containing copper as its main component, comprising the steps of:

forming the first conductive film on an insulating surface;
making the first conductive film into a desired shape with etching;
forming the second conductive film on the first conductive film through an opening portion of a mask; and
reducing a width of the second conductive film with dry etching.

2. A method of manufacturing a semiconductor device comprising a first wiring comprising at least a laminate of a first conductive film with a property as a barrier and a second conductive film containing copper as its main component, comprising the steps of:

forming a semiconductor layer on an insulating surface;
forming a first insulating film over the semiconductor layer;
forming the first conductive film on the first insulating film;
making the first conductive film into a desired shape with etching;
forming the second conductive film on the first conductive film through an opening portion of a mask;
reducing a width of the second conductive film with dry etching;
doping an impurity element into the semiconductor layer with the first wiring as a mask to form an impurity region;
forming a second insulating film over the first wiring;
forming a contact hole to reach the impurity region in the second insulating film; and
forming a second wiring electrically connected to the impurity region on the second insulating film.

3. A method of manufacturing a semiconductor device according to claim 2 further comprising the steps of:

forming a third conductive film with a property as a barrier on the second insulating film;

making the third conductive film into a desired shape with etching;

forming a fourth conductive film containing copper as its main component on the third conductive film through an opening portion of a mask; and

reducing a width of the fourth conductive film with dry etching to form the second wiring.

4. A method of manufacturing a semiconductor device comprising a wiring comprising at least a laminate of a first conductive film with a property as a barrier and a second conductive film containing copper as its main component, comprising the steps of:

forming a semiconductor layer comprising an impurity region;

forming a gate electrode over the semiconductor layer through a first insulating film;

forming a second insulating film over the gate electrode;

forming a contact hole to reach the impurity region in the second insulating film;

patterning the first conductive film formed on the second insulating film;

forming the second conductive film on the first conductive film through an opening portion of a mask; and

reducing a width of the second conductive film with dry etching to form the wiring electrically connected to the impurity region on the second insulating film.

5. A method according to claim 1, wherein the first conductive film

comprises TiN as its main component.

6. A method according to claim 2, wherein the first conductive film comprises TiN as its main component.

7. A method according to claim 4, wherein the first conductive film comprises TiN as its main component.

8. A method according to claim 1, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon.

9. A method according to claim 2, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon.

10. A method according to claim 4, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon.

11. A method according to claim 1, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon formed on the film containing Ti as its main component.

12. A method according to claim 2, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon formed on the film containing Ti as its main component.

13. A method according to claim 4, wherein the first conductive film comprises a laminate of a film containing Ti as its main component and a film comprising one of TiN, TaN, WN, TiC, TaC, and silicon formed on the film containing Ti as its main component.

14. A method of manufacturing a semiconductor device according to claim 1, wherein an insulating film with a property as a barrier comprising at least one of silicon nitride, silicon oxynitride, aluminum nitride, and aluminum oxynitride is formed with sputtering to cover the second conductive film.

15. A method of manufacturing a semiconductor device according to claim 2, wherein an insulating film with a property as a barrier comprising at least one of silicon nitride, silicon oxynitride, aluminum nitride, and aluminum oxynitride is formed with sputtering to cover the second conductive film.

16. A method of manufacturing a semiconductor device according to claim 4, wherein an insulating film with a property as a barrier comprising at least one of silicon nitride, silicon oxynitride, aluminum nitride, and aluminum oxynitride is formed with sputtering to cover the second conductive film.

17. A method of manufacturing a semiconductor device according to claim 3, wherein an insulating film with a property as a barrier comprising at least one of silicon nitride, silicon oxynitride, aluminum nitride, and aluminum oxynitride is formed with sputtering to cover the fourth conductive film.